Kimley»Horn

MEMORANDUM

To: Firat Akcay
City of Miami Beach

From: Adrian K. Dabkowski, P.E., PTOE AKD
Alex Iliev, E.I. ad

Cc: Josiel Ferrer, P.E., City of Miami Beach

Date: September 13, 2019

Subject: 6985 Abbott Avenue
Miami Beach, Florida
Valet Analysis

Kimley-Horn and Associates, Inc. has performed a valet analysis for the proposed 6985 Abbott Avenue development located in the southeast quadrant at the intersection of SR 934/71st Street and Abbott Avenue in Miami Beach, Florida. Currently, the site proposed for redevelopment consists of two (2) office buildings, one (1) with 13,424 square feet and the other with 63,069 square feet for a total of 76,493 square feet. The proposed redevelopment consists of 110 multifamily residential units, 1,264 square feet of retail space, two (2) office buildings, one (1) with 63,069 square feet and the other with 8,375 square feet for a total of 71,444 square feet, and a 5,049 square-foot coffee shop without drive-through. A project location map and conceptual site plan are provided in Attachment A.

VALET SERVICE AND OPERATIONS

Access to the proposed development will be provided by one (1) right-in/left-in limited access driveway along Harding Avenue located just south of SR 934/71st Street and one (1) limited access left-out only driveway along SR A1A/Abbott Avenue located just south of SR 934/71st Street.

Self-parking will be provided on-site. All other vehicles will either be valet or taxi/rideshare and will conduct drop-off/pick-up operations on-site. The redevelopment will be served by one (1) valet drop-off area located on-site just west of Harding Avenue and one (1) valet pick-up area located on-site just east of SR A1A/Abbott Avenue. The valet drop-off/pick-up areas consist of one (1) lane with a vehicle storage of approximately three (3) vehicle spaces and one (1) by-pass lane. It is assumed that two (2) spaces will be used for valet operations and one (1) space will be used for taxi/rideshare.

Valet drop-off/pick-up operations are contained within the site and are not expected to impact the external roadway network. It is assumed that valet pick-up vehicles will exit the site via the SR A1A/Abbott Avenue project driveway. Figure 2 contained in Attachment A provides a graphic illustration of the proposed valet routes to and from the on-site parking garage.

TRIP GENERATION

Trip generation calculations for the proposed development were performed using Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. The trip generation for the proposed redevelopment was determined using ITE LUC 710 (Office Building), ITE LUC 222 (Multifamily Housing [High-Rise]), ITE LUC 820 (Shopping Center), and ITE LUC 936 (Coffee/Donut Shop without Drive-Through Window). Project trips were estimated for the weekday A.M. and P.M. peak hours.

A multimodal (public transit, bicycle, and pedestrian) factor based on US Census *Means of Transportation to Work* data was reviewed for the census tract in the vicinity of the development. The US Census data indicated that there is a 25.1 percent (25.1%) multimodal factor within the vicinity of the development. However, a multimodal factor of 20.0 percent (20.0%) was applied to the trip generation calculations to account for the urban environment in which the project site is located based on direction by the City of Miami Beach. It is expected that residents and patrons will choose to walk or use public transit to and from the proposed development. Transit route information will be documented in the report.

Internal capture is expected between the complementary land uses within the project. Internal capture trips for the project were determined based upon methodology contained in the *ITE's Trip Generation Handbook*, 3rd Edition. The internal capture rate for the redevelopment is expected to be 8.1 percent (8.1%) during the A.M. peak hour and 17.3% percent (17.3%) during the P.M. peak hour.

Pass-by capture rates were determined based on average rates provided in the ITE's *Trip Generation Handbook,* 3rd Edition. The pass-by rate for the proposed shopping center is 34.0 percent (34.0%) during the P.M. peak hour. The pass-by rate for the proposed coffee shop without drive-through is 89.0 percent (89.0%) during the A.M. and P.M peak hours.

The redevelopment is expected to generate 54 weekday net new A.M. peak hour trips and 33 weekday net new P.M. peak hour trips. Detailed trip generation calculations and US Census *Means of Transportation to Work* data are included in Attachment B.

The A.M. peak hour generates more trips than the P.M. peak hour. Therefore, the valet analysis was prepared for the A.M. peak hour. Based on data collected at Axis Brickell located at 1111 SW 12th Street in Miami, Florida, a 5.2 percent (5.2%) valet rate was applied to net new residential trips. A 10.0 percent (10.0%) valet rate was assumed for the office and coffee shop. A 50.0 percent (50%) valet rate was assumed for the retail. Therefore, the project is expected to generate 54 net new valet trips during the A.M. peak hour. Detailed trip generation calculations, rideshare data, and valet trip data are included in Attachment B.

VALET OPERATIONS ANALYSIS

The valet queuing operations analysis was performed based on the methodology outlined in ITE's *Transportation and Land Development,* 1988. The analysis was performed to determine if valet operations could accommodate vehicular queues without blocking travel lanes on Harding Avenue. Valet operations were analyzed for the number of valet attendants and required vehicle stacking for the proposed development traffic.

Valet Assumptions

The queuing analysis used the multiple-channel waiting line model with Poisson arrivals and exponential service times. The queuing analysis is based on the coefficient of utilization, ρ, which is the ratio of the average vehicle arrival rate over the average service rate multiplied by the number of channels.

Valet attendants will be stationed at the on-site drop-off/pick-up areas. Valet drop-off trip service time was calculated based on the time it would take a valet parking attendant to obtain and park a drop-off vehicle in the on-site parking garage and return to the drop-off area. Valet pick-up trip service time was calculated based on the time it would take a valet parking attendant to bring a parked vehicle back to a patron at the on-site pick-up area. The following summarizes the total valet drop-off and pick-up service times.

The service time for valet drop-off operation corresponds to the following:

- Exchange between valet attendant and driver (0.5 minutes)
- Valet attendant drives vehicle from drop-off area to on-site parking garage (1.2 minutes)
- Valet attendant returns to drop-off area (0.8 minutes)
- Total service rate: 2.5 minutes

The service time for valet pick-off operation corresponds to the following:

- Valet attendant proceeds to the garage to retrieve the vehicle (0.5 minutes)
- Valet attendant drives vehicle from on-site parking garage to the pick-up area (1.2 minutes)
- Exchange between valet attendant and driver (0.5 minutes)
- Total service rate: 2.2 minutes

The calculated average service time is 2.5 minutes for valet drop-off operations and 2.2 minutes for valet pick-up operations. Detailed trip length calculations are included in Attachment C.

If the coefficient of utilization (average service rate/valet attendant service capacity) is greater than one (> 1), the calculation methodology does not yield a finite queue length. This result indicates overcapacity conditions for the valet area. The valet attendant service capacity is the number of total trips a valet attendant can make in a one-hour period multiplied by the number of valet attendants.

The analysis determined the required queue storage, *M*, which is exceeded *P* percent of the time. This analysis seeks to ensure that the queue length does not exceed the storage provided at a level of confidence of 95 percent (95%). Two (2) vehicle drop-off/pick-up spaces are provided for valet operations based on the attached site plan for the valet drop-off/pick-up area.

Valet Analysis

An iterative approach was used to determine the number of valet attendants required to accommodate the proposed development demand during the analysis hour and ensure that the 95th percentile valet queue does not extend beyond the designated valet service area. Detailed valet analysis worksheets are provided in Attachment D.

Results of the highest demand condition valet operations analysis demonstrate that three (3) valet attendants would be required at the valet drop-off area and two (2) valet attendant would be required at the valet pick-up area so that the vehicle drop-off and pick-up storage areas would not be exceeded.

VALET CONCLUSION

Based on the valet operations analysis performed, it was determined that the 95th percentile valet queues will not extend beyond the valet service area onto Harding Avenue. Based upon the conservative assumptions applied to the highest traffic demand condition, it was estimated that total of five (5) valet attendants may be required during peak periods for the valet drop-off and pick-up areas. It should be noted that projected vehicular volumes and estimated valet processing times were conservatively assumed in the analysis.

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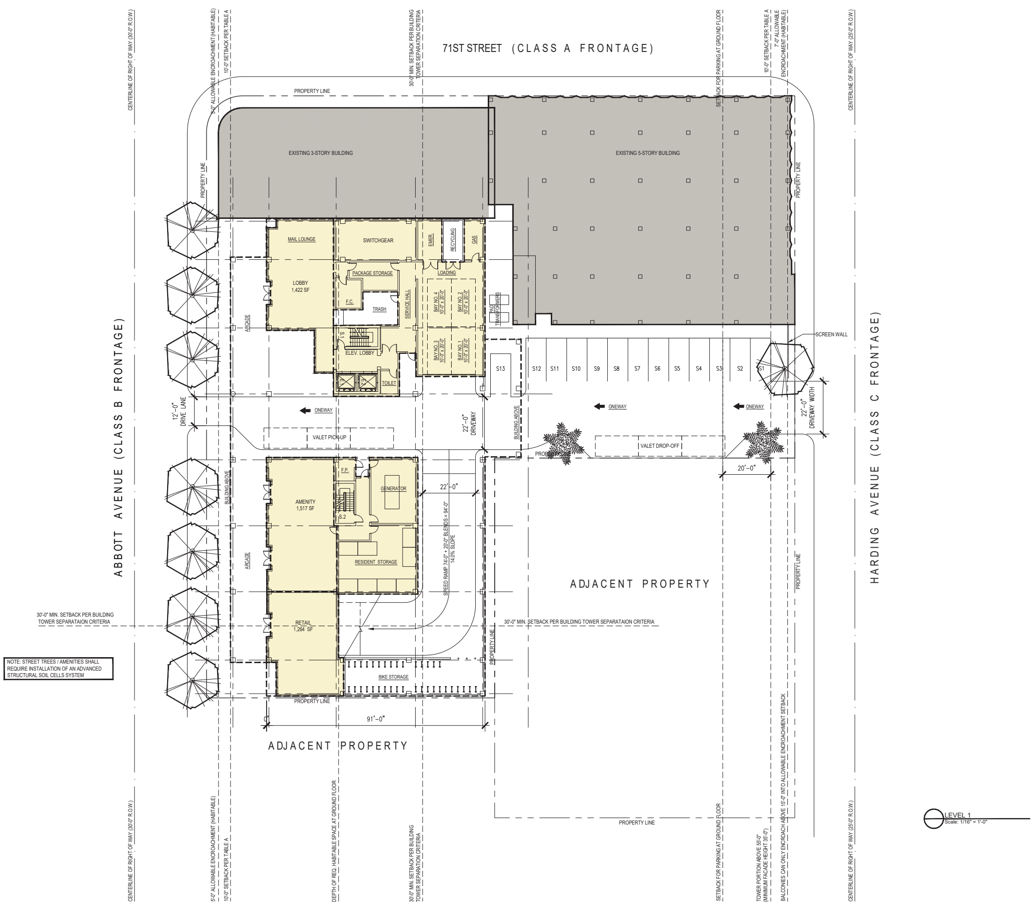
Attachment A

Conceptual Site Plan and Project Location Map



71ST STREET (CLASS A FRONTAGE)
ABBOTT AVENUE (CLASS B FRONTAGE)
HARDING AVENUE (CLASS C FRONTAGE)
PROPERTY LINE
EXISTING 3-STORY BUILDING
EXISTING 5-STORY BUILDING
MAIL LOUNGE
SWITCHGEAR
PACKAGE STORAGE
LOBBY
1,422 SF
TRASH
SERVICE HALL
LOADING
ELEV. LOBBY
TOILET
ARCADE
ONEWAY
VALET PICK-UP
VALET DROP-OFF
SCREEN WALL
S13
S12
S11
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
22'-0"
DRIVEWAY
22'-0"
DRIVEWAY WIDTH
20'-0"
12'-0"
DRIVE LANE
AMENITY
1,517 SF
GENERATOR
RESIDENT STORAGE
RETAIL
1,264 SF
BIKE STORAGE
91'-0"
ADJACENT PROPERTY
ADJACENT PROPERTY
30'-0" MIN. SETBACK PER BUILDING TOWER SEPARATAION CRITERIA
NOTE: STREET TREES / AMENITIES SHALL REQUIRE INSTALLATION OF AN ADVANCED STRUCTURAL SOIL CELLS SYSTEM
CENTERLINE OF RIGHT OF WAY
SETBACK FOR PARKING AT GROUND FLOOR
LEVEL 1
Scale: 1/16" = 1'-0"

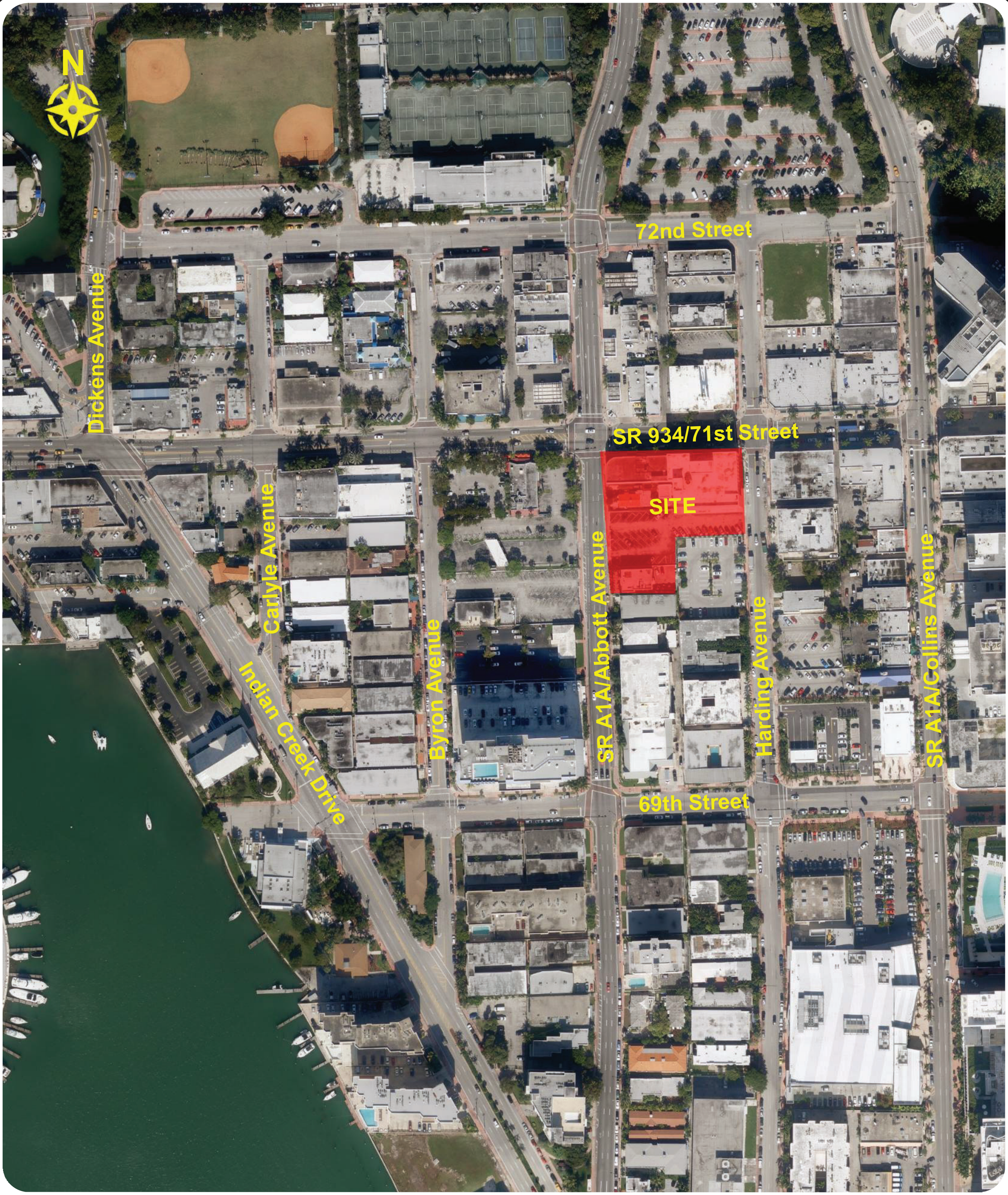


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Figure 1
Location Map
6985 Abbott Avenue
Miami Beach, Florida

Attachment B

Trip Generation and Valet Data

AM PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY AM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		NET NEW EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
	1	General Office Building	10	710	76.493	ksf	86%	14%	84	14	98	20.0%	20	67	11	78	0.0%	0	67	11	78	0.0%	0	67	11	78
	2																									
	3																									
	4																									
G	5																									
R	6																									
O	7																									
U	8																									
P	9																									
	10																									
1	11																									
	12																									
	13																									
	14																									
	15																									
		ITE Land Use Code		Rate or Equation				Total:	84	14	98	20.0%	20	67	11	78	0.0%	0	67	11	78	0.0%	0	67	11	78
		710		Y=0.94*(X)+26.49																						

PROPOSED WEEKDAY AM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		NET NEW EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
	1	Multifamily Housing (High-Rise)	10	222	110	du	24%	76%	11	33	44	20.0%	9	9	26	35	17.1%	6	9	20	29	0.0%	0	9	20	29
	2	Shopping Center	10	820	1.264	ksf	62%	38%	1	0	1	20.0%	0	1	0	1	0.0%	0	1	0	1	0.0%	0	1	0	1
	3	General Office Building	10	710	71.444	ksf	86%	14%	81	13	94	20.0%	19	65	10	75	21.3%	16	55	4	59	0.0%	0	55	4	59
	4	Coffee/Donut Shop without Drive-Through Window	10	936	5.049	ksf	51%	49%	261	250	511	20.0%	102	209	200	409	4.9%	20	198	191	389	89.0%	346	22	21	43
G	5																									
R	6																									
O	7																									
U	8																									
P	9																									
	10																									
2	11																									
	12																									
	13																									
	14																									
	15																									
		ITE Land Use Code		Rate or Equation				Total:	354	296	650	20.0%	130	284	236	520	8.1%	42	263	215	478	72.4%	346	87	45	132
		222		Y=0.28*(X)+12.86																						
		820		Y=0.94(X)																						
		710		Y=0.94*(X)+26.49																						
		936		Y=101.14(X)																						

Residential Net New Exteranl Trips	9	20	29
10% Valet Utilization	5.2%	5.2%	5.2%
Proposed Residential Valet Trips	**1**	**1**	**2**
Retail Net New External Trips	1	0	1
50% Valet Utilization	50.0%	50.0%	50.0%
Proposed Retail Valet Trips	**1**	**0**	**1**
Office Net New External Trips	55	4	59
10% Valet Utilization	10%	10%	10%
Proposed Office Valet Trips	**6**	**0**	**6**
Coffee Shop Net New External Trips	198	191	389
10% Valet Utilization	10%	10%	10%
Proposed Restaurant Valet Trips	**20**	**19**	**39**
Total A.M. Peak Hour Valet Trips	**28**	**20**	**48**

PM PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY PM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		NET NEW EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
	1	General Office Building	10	710	76.493	ksf	16%	84%	14	74	88	20.0%	18	11	59	70	0.0%	0	11	59	70	0.0%	0	11	59	70
	2																									
	3																									
	4																									
G	5																									
R	6																									
O	7																									
U	8																									
P	9																									
	10																									
1	11																									
	12																									
	13																									
	14																									
	15																									
		ITE Land Use Code			Rate or Equation			Total:	14	74	88	20.0%	18	11	59	70	0.0%	0	11	59	70	0.0%	0	11	59	70
		710			LN(Y) = 0.95*LN(X)+0.36																					

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION

		ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		EXTERNAL TRIPS			INTERNAL CAPTURE		NET NEW EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
		Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
	1	Multifamily Housing (High-Rise)	10	222	110	du	61%	39%	28	18	46	20.0%	9	23	14	37	32.4%	12	16	9	25	0.0%	0	16	9	25
	2	Shopping Center	10	820	1.264	ksf	48%	52%	10	11	21	20.0%	4	8	9	17	64.7%	11	2	4	6	34.0%	2	1	3	4
	3	General Office Building	10	710	71.444	ksf	16%	84%	13	70	83	20.0%	17	10	56	66	9.1%	6	7	53	60	0.0%	0	7	53	60
	4	Coffee/Donut Shop without Drive-Through Window	10	936	5.049	ksf	50%	50%	92	91	183	20.0%	37	73	73	146	11.6%	17	66	63	129	89.0%	115	7	7	14
G	5																									
R	6																									
O	7																									
U	8																									
P	9																									
	10																									
2	11																									
	12																									
	13																									
	14																									
	15																									
		ITE Land Use Code			Rate or Equation			Total:	143	190	333	20.0%	67	114	152	266	17.3%	46	91	129	220	53.2%	117	31	72	103
		222			Y=0.34*(X)+8.56																					
		820			LN(Y) = 0.74*LN(X)+2.89																					
		710			LN(Y) = 0.95*LN(X)+0.36																					
		936			Y=36.31(X)																					

Residential Net New Exteranl Trips	16	9	25
10% Valet Utilization	10.0%	10.0%	10.0%
Proposed Residential Valet Trips	**2**	**1**	**3**
Retail Net New External Trips	2	4	6
50% Valet Utilization	50.0%	50.0%	50.0%
Proposed Retail Valet Trips	**1**	**2**	**3**
Office Net New External Trips	7	53	60
10% Valet Utilization	10%	10%	10%
Proposed Office Valet Trips	**1**	**5**	**6**
Coffee Shop Net New External Trips	66	63	129
10% Valet Utilization	10%	10%	10%
Proposed Restaurant Valet Trips	**7**	**6**	**13**
Total P.M. Peak Hour Valet Trips	**11**	**14**	**25**

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook*, 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY (EXISTING)

GROSS TRIP GENERATION

INPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	67	11	11	59
Retail	0	0	0	0
Restaurant	0	0	0	0
Cinema/Entertainment	0	0	0	0
Residential	0	0	0	0
Hotel	0	0	0	0
	67	11	11	59

INTERNAL TRIPS

OUTPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	0	0	0	0
Retail	0	0	0	0
Restaurant	0	0	0	0
Cinema/Entertainment	0	0	0	0
Residential	0	0	0	0
Hotel	0	0	0	0
	0	0	0	0

OUTPUT

Total % Reduction	***0.0%***	***0.0%***
Office	0.0%	0.0%
Retail		
Restaurant		
Cinema/Entertainment		
Residential		
Hotel		

EXTERNAL TRIPS

OUTPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	67	11	11	59
Retail	0	0	0	0
Restaurant	0	0	0	0
Cinema/Entertainment	0	0	0	0
Residential	0	0	0	0
Hotel	0	0	0	0
	67	11	11	59

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY (PROPOSED)

GROSS TRIP GENERATION

INPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	65	10	10	56
Retail	1	0	8	9
Restaurant	209	200	73	73
Cinema/Entertainment	0	0	0	0
Residential	9	26	23	14
Hotel	0	0	0	0
	284	236	114	152

INTERNAL TRIPS

OUTPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	10	6	3	3
Retail	0	0	6	5
Restaurant	11	9	7	10
Cinema/Entertainment	0	0	0	0
Residential	0	6	7	5
Hotel	0	0	0	0
	21	21	23	23

OUTPUT

Total % Reduction	***8.1%***	***17.3%***
Office	21.3%	9.1%
Retail	0.0%	64.7%
Restaurant	4.9%	11.6%
Cinema/Entertainment		
Residential	17.1%	32.4%
Hotel		

EXTERNAL TRIPS

OUTPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	55	4	7	53
Retail	1	0	2	4
Restaurant	198	191	66	63
Cinema/Entertainment	0	0	0	0
Residential	9	20	16	9
Hotel	0	0	0	0
	263	215	91	129

B08301

MEANS OF TRANSPORTATION TO WORK

Universe: Workers 16 years and over
2013-2017 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

(226+580+289+15+56+37+11+226+255)/(865+3,235+2,663)=25.1%

	Census Tract 39.09, Miami-Dade County, Florida		Census Tract 39.13, Miami-Dade County, Florida		Census Tract 39.14, Miami-Dade County, Florida
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Total:	865	+/-197	3,235	+/-387	2,663
Car, truck, or van:	484	+/-121	1,927	+/-368	1,809
Drove alone	458	+/-123	1,744	+/-290	1,599
Carpooled:	26	+/-23	183	+/-154	210
In 2-person carpool	26	+/-23	104	+/-105	192
In 3-person carpool	0	+/-13	79	+/-109	18
In 4-person carpool	0	+/-13	0	+/-13	0
In 5- or 6-person carpool	0	+/-13	0	+/-13	0
In 7-or-more-person carpool	0	+/-13	0	+/-13	0
Public transportation (excluding taxicab):	226	+/-87	580	+/-214	289
Bus or trolley bus	226	+/-87	538	+/-212	289
Streetcar or trolley car (carro publico in Puerto Rico)	0	+/-13	0	+/-13	0
Subway or elevated	0	+/-13	42	+/-64	0
Railroad	0	+/-13	0	+/-13	0
Ferryboat	0	+/-13	0	+/-13	0
Taxicab	17	+/-17	46	+/-73	36
Motorcycle	0	+/-13	139	+/-138	21
Bicycle	15	+/-22	56	+/-68	37
Walked	11	+/-18	226	+/-175	255
Other means	28	+/-29	49	+/-47	27
Worked at home	84	+/-58	212	+/-118	189

	Census Tract 39.14, Miami-Dade County, Florida
	Margin of Error
Total:	+/-426
Car, truck, or van:	+/-375
Drove alone	+/-367
Carpooled:	+/-125
In 2-person carpool	+/-122
In 3-person carpool	+/-29
In 4-person carpool	+/-13
In 5- or 6-person carpool	+/-13
In 7-or-more-person carpool	+/-13
Public transportation (excluding taxicab):	+/-227
Bus or trolley bus	+/-227
Streetcar or trolley car (carro publico in Puerto Rico)	+/-13
Subway or elevated	+/-13
Railroad	+/-13
Ferryboat	+/-13
Taxicab	+/-68
Motorcycle	+/-34
Bicycle	+/-61
Walked	+/-158
Other means	+/-32
Worked at home	+/-122

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

Workers include members of the Armed Forces and civilians who were at work last week.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '**' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

Prepared by National Data & Surveying Services

Vehicle Classification

Location: The Axis at Brickell- 1111 SW 12th Ave
City: Miami

Day: Tuesday
Date: 7/31/2018

Time	PORTE-COCHERE						PARKING GARAGE	
	DROP OFF/PICK UP						ENTRANCE/EXIT	
	Valet	Taxi	Ride Share (Uber/Lyft)				Valet	Self Parking
			Sticker		No Sticker			
			Driveway	Street	Driveway	Street		
7:30 AM	2	0	0	1	0	1	2	30
7:45 AM	0	0	1	1	0	0	0	26
8:00 AM	2	0	1	1	0	0	2	19
8:15 AM	2	0	0	0	2	1	2	19
8:30 AM	1	0	1	0	2	1	1	15
8:45 AM	1	0	1	0	0	0	1	30
9:00 AM	1	0	1	1	0	0	1	25
9:15 AM	3	0	0	0	0	1	3	35
A.M. Peak Period Total	12	0	5	4	4	4	12	199
	A.M. Peak Period Rideshare %							**7.5%**
	A.M. Peak Period Self-Park %							**87.3%**
	A.M. Peak Period Valet %							**5.2%**
4:00 PM	4	0	0	0	0	1	4	28
4:15 PM	2	0	1	2	1	0	2	17
4:30 PM	1	0	2	0	0	0	1	13
4:45 PM	3	0	2	0	0	0	3	18
5:00 PM	0	0	1	1	0	0	0	24
5:15 PM	3	0	0	0	0	0	3	18
5:30 PM	3	0	0	0	0	0	3	24
5:45 PM	3	0	0	0	0	0	3	19
P.M. Peak Period Total	19	0	6	3	1	1	19	161
	P.M. Peak Period Rideshare %							**5.7%**
	P.M. Peak Period Self-Park %							**84.3%**
	P.M. Peak Period Valet %							**10.0%**

Attachment C

Valet Processing Time

Valet Drop-off/Pick-Up Calculated Travel Time

Parking Garage Calculated Travel Time

VALET DROP-OFF							
VEHICLE TRAVEL TIME				**VALET ATTENDANT TRAVEL TIME**			
Travel Times (Assume	15	mph speed)		Travel Times (Assume	5	ft/s speed)	
To Valet Garage (In vehicle)				**Return from Valet Garage (Walk/Run) to Valet Area**			
Distance		Travel Time		Distance		Travel Time	
0.31	miles	1.2	minutes	0.04	miles	0.8	minutes
Controlled Delay	0.5	Minutes					
Total Time	2.5	Minutes					

Parking Garage Calculated Travel Time

VALET PICK-UP							
VALET ATTENDANT TRAVEL TIME				**VEHICLE TRAVEL TIME**			
Travel Times (Assume	5	ft/s speed)		Travel Times (Assume	15	mph speed)	
To Valet Garage (Walk/Run)				**Return from Valet Garage (In Vehicle) to Valet Area**			
Distance		Travel Time		Distance		Travel Time	
0.03	miles	0.5	minutes	0.31	miles	1.2	minutes
Controlled Delay	0.5	Minutes					
Total Time	2.2	Minutes					

Attachment D

Valet Analysis

Valet Drop-off Operations

Arrival Rate	IN	
	28	veh/hr

Service Rate	IN	
	2.50	mins/veh

Service Time = mins/veh

Number of Valet Attendants (N) =	3	
Level of Confidence =	0.95	
Storage Provided On-Site =	2	vehicles
Total Entering and Exiting Vehicles(q) =	28	veh/hr
Service Capacity per N (60 mins/Service Rate) (Q) =	24.00	veh/hr/pos
Average Service Rate (t) =	2.50	mins/veh
rho (t/Q) =	0.389	

Expected (avg.) number of vehicles in the system	E(m)=	0.08	
Expected (avg.) number of vehicles waiting in queue	E(n)=	1.25	
Mean time in the queue	E(w)=	0.18	mins
Mean time in system	E(t)=	2.68	mins
Proportion of customers who wait (P)	(E(w) > 0)=	13.20%	
Probability of a queue exceeding a length (M)	P(x > M)=	5.00%	

Queue length which is exceeded 5.00% of the times is equal to -0.2 vehicles

Valet Pick-up Operations

Arrival Rate	OUT				
	20	veh/hr	Number of Valet Attendants (N) =	2	
			Level of Confidence =	0.95	
			Storage Provided On-Site =	2	vehicles
Service Rate	OUT		Total Entering and Exiting Vehicles(q) =	20	veh/hr
	2.20	mins/veh	Service Capacity per N (60 mins/Service Rate) (Q) =	27.27	veh/hr/pos
			Average Service Rate (t) =	2.20	mins/veh
			rho (t/Q) =	0.367	

Service Time = mins/veh

Expected (avg.) number of vehicles in the system	E(m)=	0.11	
Expected (avg.) number of vehicles waiting in queue	E(n)=	0.85	
Mean time in the queue	E(w)=	0.34	mins
Mean time in system	E(t)=	2.54	mins
Proportion of customers who wait (P)	(E(w) > 0)=	19.67%	
Probability of a queue exceeding a length (M)	P(x > M)=	5.00%	

Queue length which is exceeded 5.00% of the times is equal to 0.2 vehicles